

CLAIMS

We claim:

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1. A process for making a prefastened and refastenable pant, comprising:
 - providing a plurality of discrete articles, each article having first and second waist regions, a crotch region interconnecting the waist regions, a longitudinal centerline, first and second fastening components disposed in the first and second waist regions respectively and adapted to refastenably engage one another, the first waist region having opposed side panels;
 - providing an activatable retractive material in at least one of the waist regions;
 - folding each article through the crotch region;
 - folding the opposed side panels parallel to the longitudinal centerline to overlap at least portions of the first and second fastening components;
 - engaging the first and second fastening components; and
 - activating at least a portion of the retractive material causing the retractive material to retract subsequent to engagement of the fastening components.
- 15 2. The process of claim 1, wherein activating the retractive material comprises applying electromagnetic radiation.
- 20 3. The process of claim 1, wherein activating the retractive material comprises applying heat.
4. The process of claim 3, wherein a greater volume of heated air is applied to a waistband as compared to a hip section.
- 25 5. The process of claim 3, wherein a higher temperature air flow is applied to a waistband as compared to a hip section.
6. The process of claim 1, further comprising temporarily maintaining the retractive material in an extended and unstable state by application of a compaction force.
- 30 7. The process of claim 1, wherein activating the retractive material provides a waistband-to-hip circumference ratio of about 95 percent or less.

8. The process of claim 7, wherein activating the retractive material provides a waist-to-hip circumference ratio of about 90 percent or less.

5 9. The process of claim 8, wherein activating the retractive material provides a waistband-to-hip circumference ratio of about 75 to about 90 percent.

10. 10. A process for making a prefastened and refastenable pant, comprising:
providing a plurality of discrete articles, each article having first and second waist regions, a crotch region interconnecting the waist regions, a longitudinal centerline, first
10 and second fastening components disposed in the first and second waist regions respectively and adapted to refastenably engage one another, the first waist region having opposed side panels;

15 providing an activatable retractive material in at least one of the waist regions;
obtaining position control of the opposed side panels;
activating at least a portion of the retractive material causing retraction of the
retractive material;
folding each article through the crotch region;
folding the opposed side panels parallel to the longitudinal centerline to overlap at
least portions of the first and second fastening components;
20 engaging the first and second fastening components; and
maintaining position control of the opposed side panels until the fastening
components are engaged.

11. 25 The process of claim 10, wherein activating the retractive material comprises
applying electromagnetic radiation.

12. 30 The process of claim 10, wherein activating the retractive material comprises
applying heat.

13. 35 The process of claim 10, further comprising temporarily maintaining the retractive
material in an extended and unstable state by application of a compaction force.

14. The process of claim 10, wherein at least a portion of the retractive material is
activated prior to engaging the first and second fastening components.

15. The process of claim 14, wherein at least a portion of the retractive material is activated prior to folding the opposed side panels.

16. The process of claim 10, wherein activating the retractive material provides a waistband-to-hip circumference ratio of about 95 percent or less.

5 17. The process of claim 16, wherein activating the retractive material provides a waistband-to-hip circumference ratio of about 90 percent or less.

10 18. The process of claim 17, wherein activating the retractive material provides a waistband-to-hip circumference ratio of about 75 to about 90 percent.

19. An apparatus for making a prefastened and refastenable pant, comprising:
15 a pant assembly unit adapted to provide a plurality of discrete articles, each article having first and second waist regions, a crotch region interconnecting the waist regions, a longitudinal centerline, first and second fastening components disposed in the first and second waist regions respectively and adapted to refastenably engage one another, the first waist region having opposed side panels, the pant assembly unit further adapted to provide an activatable retractive material in at least one of the waist regions;

20 a product folding mechanism adapted to fold each article through the crotch region;
a side panel folding mechanism adapted to fold the opposed side panels parallel to the longitudinal centerline to overlap at least portions of the first and second fastening components;

25 a fastener engaging mechanism adapted to engage the first and second fastening components; and
an activating mechanism adapted to activate at least a portion of the retractive material and cause the retractive material to retract subsequent to engagement of the fastening components.

30 20. The apparatus of claim 19, wherein the activating mechanism emits electromagnetic radiation.

21. The apparatus of claim 19, wherein the activating mechanism emits heated air.

35 22. The apparatus of claim 21, wherein a greater volume of heated air is applied to a waistband as compared to a hip section.

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23. The apparatus of claim 21, wherein a higher temperature air flow is applied to a waistband as compared to a hip section.

24. An apparatus for making a prefastened and refastenable pant, comprising:
5 a pant assembly unit adapted to provide a plurality of discrete articles, each article having first and second waist regions, a crotch region interconnecting the waist regions, a longitudinal centerline, first and second fastening components disposed in the first and second waist regions respectively and adapted to refastenably engage one another, the first waist region having opposed side panels, the pant assembly unit further adapted to 10 provide an activatable retractive material in at least one of the waist regions;

15 a position control mechanism adapted to obtain position control of the opposed side panels;

an activating mechanism adapted to activate at least a portion of the retractive material and cause the retractive material to retract;

20 15 a product folding mechanism adapted to fold each article through the crotch region; a side panel folding mechanism adapted to fold the opposed side panels parallel to the longitudinal centerline to overlap at least portions of the first and second fastening components; and

25 20 a fastener engaging mechanism adapted to engage the first and second fastening components;

wherein the position control mechanism maintains position control of the opposed side panels until the fastening components are engaged.

25 25 The apparatus of claim 24, wherein the activating mechanism emits electromagnetic radiation.

26. The apparatus of claim 24, wherein the activating mechanism emits heated air.

27. The apparatus of claim 26, wherein a greater volume of heated air is applied to a 30 waistband as compared to a hip section.

28. The apparatus of claim 26, wherein a higher temperature air flow is applied to a 35 waistband as compared to a hip section.

29. A prefastened and refastenable pant, comprising:
a chassis defining a first waist region having opposed side panels, an opposite second waist region, a crotch region disposed between and interconnecting the waist regions, and a longitudinal centerline, the waist regions together defining a waistband and a hip section;

5 at least one first fastening component disposed in the first waist region;

10 at least one second fastening component disposed in the second waist region and adapted to refastenably engage the first fastening component;

15 a retractive material disposed in at least the waistband;
wherein the pant is folded through the crotch region and folded through the opposed side panels so that portions of the waist regions overlap, the first and second fastening components are engaged with one another to maintain the pant in a prefastened condition, and the pant has a waistband-to-hip circumference ratio of about 95 percent or less which results from activation of the retractive material after the fastening components are engaged to one another.

30. The prefastened and refastenable pant of claim 29, wherein the pant has a waistband-to-hip circumference ratio of about 90 percent or less.

20 31. The prefastened and refastenable pant of claim 30, wherein the pant has a waistband-to-hip circumference ratio of about 75 to about 90 percent.

32. The prefastened and refastenable pant of claim 29, wherein the pant has a waistband-to-hip circumference ratio measured at 2000 grams of about 100 percent.

25 33. The prefastened and refastenable pant of claim 29, wherein the retractive material comprises an elastomeric material.

34. The prefastened and refastenable pant of claim 29, wherein the retractive material
30 comprises a nonelastomeric material.

35. The prefastened and refastenable pant of claim 29, wherein the retractive material is disposed in the side panels.